

# Tennessee Infrastructure Scorecard



## Contents

Introduction .....	2
Financial and General Information .....	2
System Information .....	2
Performance .....	2
Ratios .....	3
Rates .....	3
Reserves .....	4
Uncollected Accounts .....	4
Operating Budget .....	4
Asset Tracking .....	4
Accountability .....	4
Long-term Debit .....	5
Asset Management .....	5
Wastewater Inflow and Infiltration (I/I) .....	5
System Information .....	5
Wastewater Assessment Tool .....	5
Wastewater Treatment Plant .....	6
Collection System .....	6
Wastewater Energy Assessment .....	6
Water Loss .....	6
System Information .....	6
Drinking Water Plant .....	6
Water Distribution System .....	6
Water Loss Assessment .....	7
Drinking Water Optimization .....	7
Drinking Water Energy Assessment .....	7

## Introduction

The Tennessee Infrastructure Scorecard (TNIS) is a tool designed to assist utilities, technical assistance providers, and agencies benchmark system resilience based on several key factors, including financial, managerial, and technical performance. The Scorecard is not used in regulatory compliance issues and is designed to help highlight successes and opportunities for improvement. Completion of these worksheets can assist a community develop a business action plan and address critical issues, simple cost-effective tools, or improved optimization and performance in basic system areas. The TNIS is divided into financial, asset management, optimization, system compliance, and performance sections. You should complete the TNIS based on the type of system you operate.

Drinking water systems should complete the following worksheets: Financial and General, Asset Management, Water Loss, Drinking Water Optimization, and Water Energy Assessment.

Wastewater systems should complete the following worksheets: Financial and General, Asset Management, Wastewater I & I, and Wastewater Energy Assessment.

## Financial and General Information

### System Information

Information for the SYSTEM INFORMATION section should be available from the audited financial statements and utility office. Audits are required to be submitted to the State of Tennessee Comptroller's office and are public record. You can search for a particular audit at <https://comptroller.tn.gov/advanced-search.html>

Financial and operating reports should be produced and presented to the governing board of the utility regularly, or as required by law. These reports can also be used internally to help utility staff operate more effectively and efficiently. The contents of these reports will differ widely and can be modified periodically as the utility deems necessary.

Annual audits are required by law for utilities and governmental entities and may be required by lenders. An annual independent audit (performed by a Certified Public Accountant) should be reviewed by management and presented to the governing body for their review and acceptance. Any adverse findings are usually outlined at the end of the audit report and should be addressed in the auditor's verbal presentation to the governing board. These findings must be addressed by board and management in a timely fashion and will be reviewed by your auditor in future audit reports.

### Performance

Information for the PERFORMANCE section should be available from annual audits or other internal financial statements. (the three main financial pages in the audit are: Statement of Net Position, Statement of Revenues, Expenses, and Changes in Net Position, and Statement of Cash Flows). Operating Revenue and Operating Expense are typically found on the Statement of Revenues, Expenses and Changes in Net Position. Depreciation expense is normally included in the list of operating expenses. Debt Service includes interest and principal paid on debt for the next one-year period and is found in the audit notes. Capital Assets and Accumulated Depreciation can be found on the Statement of Net Position.

## Ratios

Information for the RATIOS section will be automatically transferred from the PERFORMANCE section of the tool. These ratios provide a benchmark for financial condition for utilities and the minimum standards for each ratio is outlined on the form. An Operating Ratio can be computed two basic ways. The first ratio takes operating revenues minus operating expenses (including depreciation) and should be 1.0 or higher. The second method excludes depreciation and should be 1.25 or higher to indicate a utility in healthy financial condition.

The Debt Service Coverage ratio measures a utility's capacity to pay debt service (principal and interest) on loaned capital for infrastructure improvements or expansions. This ratio is typically computed by a bank, state agency lender, or a federal agency lender such as USDA-Rural Development. The ratio is computed by taking operating revenue minus operating expenses and adding back depreciation expense, then dividing by annual principal and interest payments. To demonstrate the ability to pay existing and/or new debt, the ratio should be 1.2 or higher. Some lenders may require either a lower or higher Debt Service Ratio minimum.

## Rates

Information for the RATES section should be available at the utility office. Water and wastewater utilities should be charging rates that are adequate to cover all expenses necessary for carrying out safe, reliable service to the customer, plus a marginal return on investment for privately-owned utilities or a reasonable reserve in the case of governmentally-owned utilities (all set by management/Board as a part of budgetary process). Utility rates should not be subsidizing other non-utility activities of the governing entity. This is the concept of applying "Cost-based" rates and fee structure for other services (tap fee, connect fee, reconnect and disconnect fee, etc.). **NOTE: If you do not have a rate for any of the selections, leave the cell blank.**

A Cost of Service (COS) Study may be conducted to determine appropriate rates and rate structures. Cost of service studies can be conducted on an entire utility system or on selected portions of the overall operations. Often, utilities want to know what their cost of water production/treatment or cost to provide water to a wholesale customer is. The same holds true for a wastewater utility in regards to cost of treatment.

Cost of service studies can also be conducted to establish a "usage or variable cost" and a "base or fixed cost." Usage costs are generally variable costs that include expenses incurred from the pump to the tap (typically power and chemical costs). Base costs are usually fixed costs including administration, capital improvements and equipment. They also include operational salaries, debt service and depreciation.

The Affordability Index (AI) is a ratio that can be used to determine the affordability of water and wastewater services. It is computed by taking the average annual utility bill (water and/or wastewater) and dividing by the Median Annual Household Income (MHI). USEPA considers that an AI greater than 2.5 for water and an additional 2.0 for wastewater is unaffordable.

## Reserves

Information for the RESERVES section may be available from the annual audit and is typically found on the Statement of Net Position and the Notes to financial statements section (if set by management and/or Board). For the most up-to-date information on reserve accounts the utility administrative office should be consulted. Reserve accounts are called many different names. Debt service reserves are established to make regular payments on debt and are a part of Bond Covenants. Maintenance or “Repairs and Replacement” reserves are used for general repairs on a short-term basis (12 to 18 months or typical of a budget cycle). A rule of thumb for maintenance reserves is between 3 and 5 percent of operating revenues. Depreciation or Capital reserves are amassed to replace major components of the utility infrastructure (replacement of existing assets, not normal operation and maintenance). Emergency reserves or contingent reserves may also be established to cover expenses associated with natural disasters and other catastrophic events as a bridge for liability insurance reimbursement. Some reserve accounts are required by lenders to be maintained a certain level. Loan documents should contain these reserve requirements and all other reserves are set by management and/or Board.

## Uncollected Accounts

Tracking uncollected customer accounts on a monthly, quarterly and annual basis provides a very useful trend or benchmark for utilities. High amounts of uncollected customer accounts may indicate that administrative weaknesses exist at a utility. Payment and service policies may need revision or existing policies may not be properly enforced.

## Operating Budget

An annual OPERATING BUDGET is required by statute for many utilities, and for those utilities that are not required, a budget is strongly advised. The operating budget provides an annual spending plan for decision makers and management as they carry out the day-to-day operations of a utility. A budget should be planned, presented, approved, amended if necessary, and followed closely to ensure financial capacity and sustainability.

## Asset Tracking

Utility assets are expensive and often unseen. All utilities must maintain systems to track their assets on an ongoing basis. Modern technology makes these tasks easier and more powerful each year. Several questions can be asked of utilities to measure their asset tracking abilities. For example: Are they utilizing computerized mapping systems to manage their infrastructure? Do they have a meter change-out or replacement protocol? Please refer to the Asset Management tab for insight into these questions and answer accordingly.

## Accountability

Water loss and wastewater infiltration/inflow are major operational and financial considerations for every utility. This information must be accounted for, verified and tracked on a continuous basis to ensure effective and efficient utility management. The information required for this section will be automatically generated when the tabs on Water Loss or Wastewater I/I are complete. Accountability insures proactive vs. reactive management and adjust to problem prior to audit being finalized.

## Long-term Debit

The amount of long-term debt and the per capita debt is a very useful measure of financial capacity and sustainability. Long term debt is defined as debt with a maturity of 12 months or longer. This information can be obtained from the audited financial statements as well as the utility's office. Statewide benchmarks for debt can be obtained with a robust effort to acquire current debt-level data from utilities in each state.

## Asset Management

Asset management plans are the foundation of sustainability for utility systems of all sizes and types. These plans identify, map, and support an operation and maintenance plan for all assets the utility system is responsible for managing to ensure the system is providing the appropriate level of service to its customers, while tracking needed upgrades, repairs, and maintenance.

Asset management can be defined simply as 1. understanding what and where your current utility assets are, 2. ensuring a high level of customer service by actively operating, maintaining, and repairing current assets, and 3. working to identify and prepare for future service needs and potential critical asset failure. Having a plan can reduce the cost, stress, and anxiety when the inevitable failure occurs, by preventing or early identification of costly compliance issues or damages and prepares the system for any needed capital expansion project.

Sometimes communities and utility systems have plans, but they are not all in one location. Fiscal Sustainability Plans (FSP) are required to secure funding from the TN State Revolving Fund (SRF) loan program. These plans compliment new or expanding treatment works. If your community has secured an SRF loan on or before October 2014, you may have an FSP that contains a lot of this information. Additionally, the CMOM or Capacity, Management, Operation and Maintenance Plan is required by TN Department of Environment and Conservation, Division of Water Resources when expanding or updating collection lines. These documents can be part of or the majority of a system's Asset Management Plans. Other items, including old and new maps, operation and maintenance manuals, or condition assessments of facilities and ancillary equipment may qualify as part of your asset management plan.

While communities and utilities are not expected to demonstrate a robust Asset Management Plan for this exercise, key questions and statements help benchmark a community's progress towards establishing and upkeeping a useful plan.

## Wastewater Inflow and Infiltration (I/I)

### System Information

This section collects basic information about your wastewater treatment works and collection system. If you represent a drinking water operation, please skip to the drinking water sections of this workbook. Most facility operators should know if the system they are operating has compliance issues or significant I/I. Maps, your current permit information, and any compliance letters can assist you in completing this section.

### Wastewater Assessment Tool

This information can be sourced from your Monthly Operating Reports (MOR or EMOR), Discharge Monitoring Reports (Net DMR), National Pollutant Discharge Elimination System (NPDES) Permit or State



Operating (SOP) Permit. If you represent a drinking water operation, please skip to the drinking water sections of this workbook.

## Wastewater Treatment Plant

Operators should be familiar with this basic information for the plant they are operating. If more information is needed, please refer to your NDPES permit and project design engineering reports. If you represent a drinking water operation, please skip to the drinking water sections of this workbook.

## Collection System

Operators should be familiar with this information for the plant's collection system they are operating. If more information is needed, please refer to your NDPES permit, fiscal sustainability plans, asset management plan, CMOM, project design engineering reports, as-built engineering plans or any other document that tracks collection line age, length, connection types, manholes, and the like.

## Wastewater Energy Assessment

This questionnaire is aimed at determining your system's level of potential energy savings from simple measures. Wastewater treatment experts have compiled long lists of actions an operator can take to optimize or conserve energy and water while still operating a plant safely and within regulatory limits. This questionnaire has ten (10) simple, low to no cost operational adjustments you can make to optimize energy savings and improving your budget bottom line.

## Water Loss

### System Information

This section collects basic information about your drinking water treatment plant and distribution system. If you represent a wastewater operation, please skip to the wastewater sections of this workbook. Most facility operators should know if the system they are operating has compliance issues or significant water loss. Maps, your current permit information, and any compliance letters can assist you in completing this section.

### Drinking Water Plant

Operators should be familiar with this basic information for the plant they are operating. If more information is needed, please refer to your SDWIS permit, water withdrawal permit, and any other regulatory documents required to complete this section. If you represent a wastewater operation, please skip to the wastewater sections of this workbook.

### Water Distribution System

Operators should be familiar with this information for the plant's distribution system they are operating. If more information is needed, please refer to your SDWIS permit, fiscal sustainability plans, asset management plan, or any other document that tracks distribution line age, length, connection types, and the like.

## Water Loss Assessment

This information can be accessed from your most recent AWWA audit report. Please review that report and reference that information here where applicable.

## Drinking Water Optimization

Some drinking water systems struggle to maintain compliance with emergent contaminants or elements of the treatment process. In this section operators can self-identify challenges they may face working through issues with disinfection by-products and note any other emergent issues they may struggle with in the future.

## Drinking Water Energy Assessment

This questionnaire is aimed at determining your system's level of potential energy savings from simple measures. Drinking water treatment experts have compiled long lists of actions an operator can take to optimize or conserve energy and water while still operating a plant safely and within regulatory limits. This questionnaire has ten (10) simple, low to no cost operational adjustments you can make to optimize energy savings and improving your budget bottom line.